

1.030.087



PATENT SPECIFICATION

DRAWINGS ATTACHED

1.030.087

Date of Application and filing Complete Specification: Dec. 2, 1964.

No. 49076/64.

Application made in Sweden (No. 13868) on Dec. 13, 1963.

Complete Specification Published: May 18, 1966.

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Index at acceptance:—F2 A(5B3, 5C2, 7A, 7X, 24)

Int. Cl.:—F 06 c

COMPLETE SPECIFICATION

Improvements in or relating to Plummer Blocks

WE, AKTIEBOLAGET SVENSKA KULLAGER-FABRIKEN, a Corporation organized under the Laws of the Kingdom of Sweden, of 17, Artillerigatan, Göteborg, Sweden, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention comprises improvements in or relating to plumber blocks.

According to this invention, a plumber block comprises an annular socket encircled by a bracket member which parts are so constructed, that portions of the socket member overlap opposite sides of the bracket member in a radial direction, and a ball or roller bearing whereof the outer race ring is mounted in the socket member, the shape and dimensions of the inner surface of the socket member and the co-operating external surface of the outer race ring of the bearing being such that the socket member is elastically deformed to create forces which cause the overlapping parts to be clamped together.

By adoption of the invention, a simple form of plumber block bearing arrangement can be produced which gives rise to advantages in manufacture and maintenance, for example replacement of the bearing.

According to one preferred arrangement, the inner surface of the socket member and the external surface of the race ring have curved generatrices, the radius of curvature of the generatrix of the inner surface being less than the radius of curvature of the generatrix of the external surface. For example, these surfaces may be part-spherical shaped.

The grooving in the outer surface of the socket member may be constituted either by a continuous peripheral groove, or by a number of angularly-distributed grooves.

Some constructions embodying the invention will now be described with reference to the accompanying drawings in which:—

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Figure 1 is a section through a plumber block,

Figure 2 is a side view of the device shown in Figure 1,

Figure 3 is a view like Figure 1 with parts removed, and

Figures 4 and 5 show alternative forms of the bearing seat.

The plumber block comprises a bearing 1, which may be either a ball bearing or a roller bearing having an outer race ring 2 whereof the external surface is part spherical shaped. The race ring 2 is received in an annular socket member 3 having an internal part spherical shaped surface 4 to correspond to the part spherical shaped surface of the outer race ring 2. Thus the race ring 2 is angularly adjustable in the socket member.

The socket member may conveniently be made of a synthetic plastics material, such as is sold under the Registered Trade Mark teflon, glass fibre reinforced nylon. Through the use of a material of this type certain advantages are obtained. Thus self-alignment of the shaft carried by the plumber block is facilitated.

The socket member 3 is mounted in an aperture, indicated by the dotted line 6 in Figure 2, provided for this purpose in sheet metal bracket 5. The lower portion of the sheet metal bracket 5 is bent to provide a sole plate 7 which for fixing purposes is provided with holes for screws or similar fixing members. The sole plate 7 may of course be formed in many different ways, for instance so that the screw holes will be located in line with the central plane of the socket member 3.

The member 3 has an external groove 8 (Figure 1) the sides and bottom of which are engaged respectively by parts of the sides and the internal bore 6 of the bracket 5.

It is arranged that the radius of curvature 9 (Figure 3) of the part spherical shaped surface 4 of the socket member 3 is less than the

radius of curvature 10 of the part spherical shaped surface of the outer race ring 2. Thus when the two are assembled, the member 3 is elastically deformed by outwardly directed forces 11 created by the interference fit, and this deformation causes forces 12 which clamp the bracket in the groove 8, whereby the socket member 3 is firmly held in the bracket 5.

Figure 4 shows a form of socket member 3 having a groove 8 extending around its whole circumference. The socket member is split at 13 to facilitate its introduction into the aperture in the bracket. Diametrically opposed cut-outs 14 are provided in the inner periphery of the socket to enable the bearing to be inserted into the socket.

Figure 5 shows a form of socket member 3 having a number of angularly distributed grooves 15 in its external surface which receive corresponding projections on the bracket. The arrangement being such that both circumferential and axial interlocking takes place between the socket member and the sheet metal member.

In this construction, the aperture 16 has been made larger than the width of the bearing outer race ring 2 so that it can be introduced into the socket 3 and this large gap 16 is filled by an arcuate piece 17.

Depending upon whether the socket member 3 is united with the bracket in an injection moulding process or is formed as a separate piece, the opening 16 may extend entirely or only partially across the width of the socket member. In order to prevent foreign particles from entering the bearing the latter may be provided with any suitable known kind of seal in the shape of rings of metal, synthetic plastics material.

The invention is not limited to the constructions above described but may be modified in many different ways. Thus the socket member 3 may be mounted together with its bearing directly in the opening in the bracket 5. The device may also be formed as a flange

bearing housing. For example, in the illustrated constructions, the co-operating surfaces of the bearing and the socket are part-spherical shaped; an equivalent effect may be obtained by otherwise suitably forming these surfaces. The contact between the surfaces may be relieved over a portion thereof.

WHAT WE CLAIM IS:—

1. A plummer block comprising an annular socket member encircled by a bracket member which parts are so constructed, that portions of the socket member overlap opposite sides of the bracket member in a radial direction, and a ball or roller bearing whereof the outer race ring is mounted in the socket member, the shape and dimensions of the inner surface of the socket member and the co-operating external surface of the outer race ring of the bearing being such that the socket member is elastically deformed to create forces which cause the overlapping parts to be clamped together.

2. A plummer block according to claim 1 wherein the inner surface of the socket member and the external surface of the race ring have curved generatrices, the radius of curvature of the generatrix of the inner surface being less than the radius of curvature of the generatrix of the external surface.

3. A plummer block according to claim 1 or claim 2, wherein the grooving is constituted by a continuous peripheral groove.

4. A plummer block according to claim 1 or claim 2, wherein the grooving is constituted by a number of angularly distributed grooves.

5. A plummer block substantially as hereinbefore described with reference to and as illustrated in Figures 1 to 3, or these Figures as modified by Figure 4 or Figure 5.

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COMPLETE SPECIFICATION

1 SHEET

This drawing is a reproduction of
the Original on a reduced scale

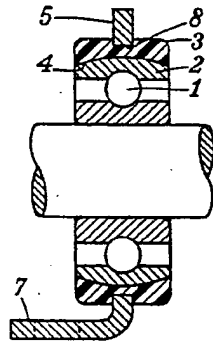


Fig. 1

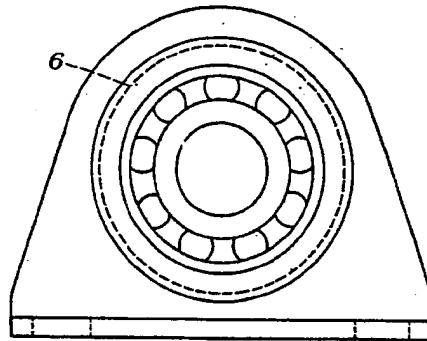


Fig. 2

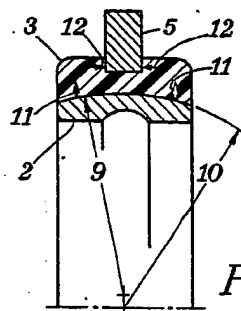


Fig. 3

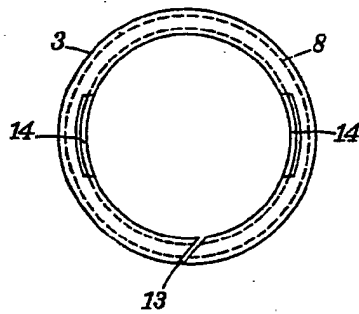


Fig. 4

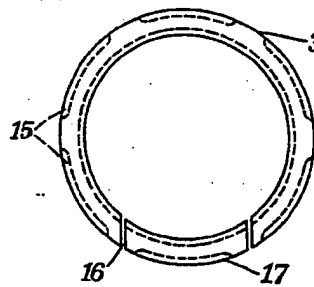


Fig. 5